



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,009	09/29/2003	Satoru Saito	121036-062	2388

35684 7590 09/25/2006

BUTZEL LONG  
350 SOUTH MAIN STREET  
SUITE 300  
ANN ARBOR, MI 48104

EXAMINER

KATAKAM, SUDHAKAR

ART UNIT

PAPER NUMBER

1621

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/674,009

Applicant(s)

SAITO ET AL.

Examiner

Sudhakar Katakam

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/29/2003</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enokida et al (US patent# 5,969,066) in view of Worm et al (US patent# 6734254).

The instant claims are drawn to a copolymer composition of fluorine-containing elastomer. It is comprised of, (a) vinylidene fluoride, (b) tetrafluoroethylene, (c) perfluoro (methyl vinyl ether), (d)  $\text{CF}_2=\text{CFO}[\text{CF}_2\text{CF}(\text{CF}_3)\text{O}]_n\text{CF}_3$ , where  $n=2-6$ , (e)  $\text{RfX}$ , where Rf is an unsaturated fluorocarbon group having 2-8 carbon atoms, which may contain at least one ether group, and X is a bromine or iodine atom.

Enokida et al teaches a fluoroelastomer and its cross-linkable composition (col. 7, lines 10-19) using the compounds, (a) vinylidene fluoride, (b) tetra-fluoroethylene, (c) perfluoro (alkyl vinyl ether) and it is also comprised of (d)  $\text{CF}_2=\text{CFOCF}_2\text{CF}_2\text{Br}$ , (e)  $\text{BrCF}_2\text{CF}_2\text{I}$ . So, Enokida et al teaches a general composition of fluoroelastomers and their physical properties that encompasses the compounds included in claims 1-12 and 17-20 except a compound listed under (d).

Although the composition taught by Enokida et al encompasses the specific compounds of the instant application, it does not specifically include compound (d) as is recited in claim 1. The generic composition of Enokida et al teaches the claimed

Art Unit: 1621

invention with sufficient particulars that the composition and its physical properties would have been prima facie obvious. Although the reference does not use the compound  $\text{CF}_2=\text{CFO}[\text{CF}_2\text{CF}(\text{CF}_3)\text{O}]_n\text{CF}_3$ , it would have been obvious to a person skilled in the art to further to modify the composition with the reasonable expectation of success, since Worm et. al. teaches the advantages of using  $\text{CF}_2=\text{CFO}[\text{CF}_2\text{CF}(\text{CF}_3)\text{O}]_n\text{CF}_3$ , in fluoroplastic polymers (col. 2, lines 10-26).

3. Claims 13-16, 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enokida et al (US patent# 5,969,066).

The instant claims are drawn to obtaining a fluororubber-based sealing material by curing molding of a fluorine-containing elastomer composition.

Enokida et al teaches the method of making fluoroelastomer and its cross-linkable composition (col. 1, lines 55-67 & col. 2-6). The kneaded product was subjected to press vulcanization (col. 8, lines 8-20). The scope of the generic composition prepared by Enokida et al overlaps the scope of the generic composition found in the instant claims 13-16 and 21-28. The reference does not use the compound  $\text{CF}_2=\text{CFO}[\text{CF}_2\text{CF}(\text{CF}_3)\text{O}]_n\text{CF}_3$ , instead they used  $\text{CF}_2=\text{CFOCF}_2\text{CF}_2\text{Br}$ , but it would have been obvious to a person having ordinary skill in the art to further to modify the composition with the reasonable expectation of success, since the substitution of Br with F does not make difference in making a elastomer.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhakar Katakam whose telephone number is 571-272-9929. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SK



SIKARL A. WITHERSPOON  
PRIMARY EXAMINER